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## AN OLD COLLECTING GROUND REVISITED.

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While a resident of St. Augustine, Florida, from 1880-88, I made a careful study of the mollusca of the harbor and vicinity. The habits of the various species and the factors governing their distribution, which in many cases was much restricted, especially appealed to me. With these facts in mind it was with great interest that I visited the old city after an absence of thirty-one years. Time and the ever-shifting sands have played sad havoc with many of my old collecting grounds, and I looked in vain for some of the rarer species.

The accompanying maps can give only a general idea of the changes that have taken place.<sup>1</sup> The "Lagoon" of the eighties is gone and there are now two inlets with about the same depth of water on each bar according to the government chart, survey of 1910, although I was told that the southern channel has now much less water on the bar than the other. Marsh Island at the mouth of Hospital Creek is also gone, and the sand bar that was formerly only east of the island now extends to the fort. There is no trace of the site of the old Spanish lighthouse,

<sup>1</sup>Figure 1 shows the harbor and vicinity about 1883, before the St. Sebastian marsh was filled, also the approximate positions of the "Lagoon" and Marsh Island. The figures refer to the species mentioned in the text that were found at those particular places.

Figure 2 is based on the U. S. coast survey chart, No. 159, survey of 1910, and represents in a general way present conditions.

which was probably at the extreme end of the now exposed ledge of coquina and about 200 feet below the present high-

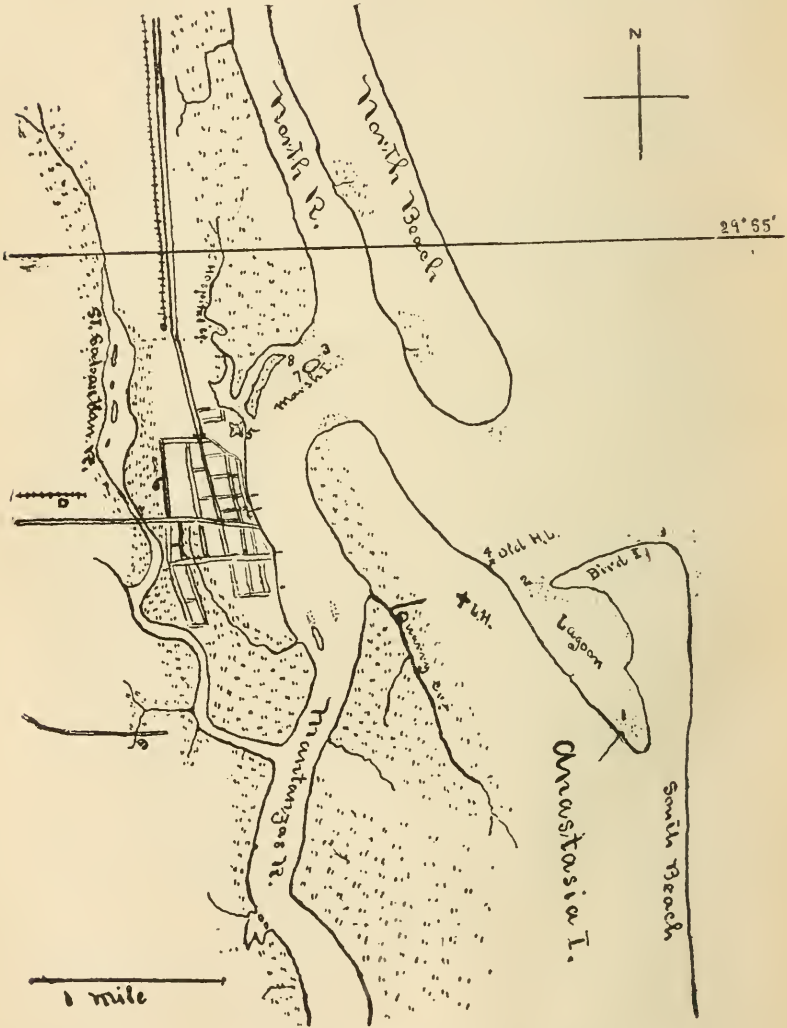


Fig. 1. St. Augustine, about 1883.

water mark. The government has endeavored to prevent the wearing away of this portion of Anastasia Island by construct-

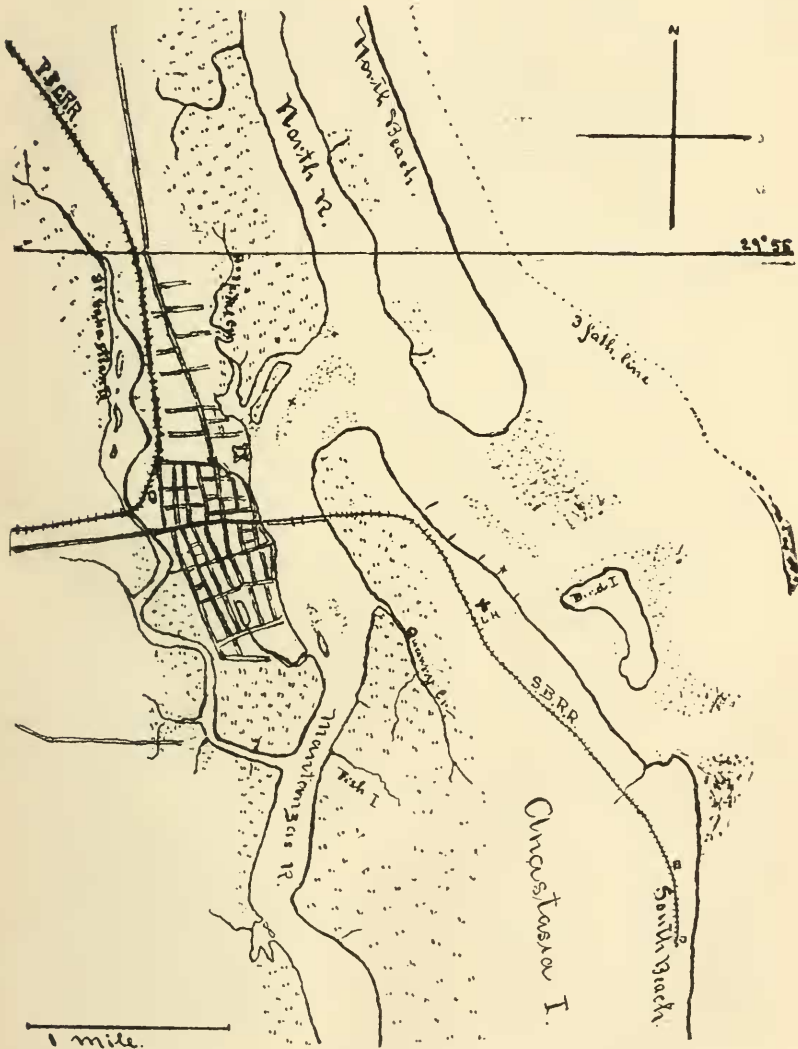


Fig. 2. St. Augustine at present.

ing four jetties, one below and three above the ledge referred to, but the erosion apparently still continues. The following notes are based chiefly on those species that were very limited in their distribution and which therefore may have become locally extirpated by the many changes affecting their environments. A list of about 200 species published by the writer in 1890<sup>1</sup> forms the basis of some of the following remarks.

*Macrocallista nimbose* Sol. (1) This is the *Callista gigantea* Gmel. of my list. It was found only in the shoal water at the head of the "Lagoon," seeming to prefer the quiet water, as I never found a trace of it on the ocean beach. At most only six or eight specimens were found, and many of these were broken, probably by the large ray or "clam cracker" as the butterfly ray (*Pteroplatea maclura*) is called by the fishermen.

*Donax obesa* d'Orb. (2) This little chunky species was formerly common on the sand bars at the mouth of the "Lagoon," where there was a slight shifting of the sand at every tide. The larger species, *Donax variabilis* Say, was (and probably is) exceedingly abundant on the ocean beaches, especially the "South beach." I was quite amused at Daytona to hear the popular name of "coquina" applied to this shell, and one young man talking about "coquina bouillon." While this is entirely proper, as the Spanish word coquina means, broadly speaking, shell-fish, the name has become so generally used for the shell-rock (often made up largely of this species) that at first it sounded like pretty hard diet. I am sorry that opportunity did not permit my getting a large series of this species including the young, as I should have liked to have made some comparisons of the young of *D. variabilis* with that of the typical or more northern *D. fossor* Say. As I remember I could never satisfactorily separate the two forms at St. Augustine and omitted the latter from my list, although it is recorded from the entire coast of Florida and westward to Texas. Mazyck in his "Catalog of Mollusca of South Carolina," says of *D. fossor*, "very rare, Sullivan Island."

<sup>1</sup> An Annotated List of the Shells of St. Augustine, Florida, THE NAUTILUS, vol. iii, pp. 103, 114 and 137, vol. iv, pp. 4-6.

On one visit to the South beach I found it literally strewn with perfect specimens of *Divaricella quadrisulcata* d'Orb. (*Lucina dentata* of my list), but never again did I find them in such numbers. At another time quantities of an *Arca* referred to in my list as *Arca americana* Gray, were found. It is more elongated than those found in the harbor, with a thinner and lighter brown periostracum, and probably represents only a variety or ocean form of *A. campechiensis* Dillw. (*Arca pexata* Say).

*Lucina philippiana* Reeve (*Loripes edentula* of my list). Large single valves were frequently found and occasionally at the mouth of Hospital creek shells were found in the mud with both valves intact, but like the *Phacoides filosa* Conr. in Portland harbor, Maine, always dead. It may also be of interest to note that two specimens of *Solemya velum* Say, and a few single valves of *Mya arenaria* were found on the north beach, the most southern records for the species.

*Panopea bitruncata* Conr. (3) This large and variable shell which was referred to in my list under both *Glycimeris reflexa* Say, and *G. americana* Conr., was later the subject of a paper by the writer<sup>1</sup> in which the synonymy was straightened out, and a fine specimen found on the bar east of Marsh island was figured. Common in the pliocene of the Caloosahatchie, but recent examples are exceedingly rare. Living deep in the mud they are difficult to obtain, unless on rare occasions extensive harbor dredgings might bring some to the surface. They are also very apt to be destroyed by changes such as encroaching sand bars, sedimentary deposits, and harbor pollution.

The rocks that represented the ruins of the old Spanish lighthouse (the tower of which fell in June, 1880, while the keeper's house had fallen several years before) were a favorite place for *Thais floridana* Conr. (*Purpura haemostoma* var. *floridana* of my list). During my recent visit I failed to find a living specimen of this species either on the ledge or jetties, but the tides were not very low and it may be that they could have been found at a lower tide. On all of the rocks including the

<sup>1</sup>THE NAUTILUS, vol. 18, pp. 73-75, pl. 4, 1904.

jetties were great numbers of *Siphonaria naufragum* Stearns (*S. lineolata* d'Orb.). One thing that seemed to impress me more than when I lived there, was the great abundance of oysters on all the rocks, even around the water battery of the fort and also on the piling. In speaking to an old friend regarding the matter, he said he thought that around the fort it was due to cleaning off the rocks a few years ago, thus presenting a clean surface for the young to cling to. This array of bristling oysters around the water battery of the fort deterred me from a hunt for *Nerita peloronta* and *N. versicolor* (5), three living specimens of which I found there together with *Litorina angulifera*, being the most northern record for the three species.

*Cerithidea scalariformis* Say (6). The only place that I ever found this species at St. Augustine was in the more sandy portion of the marsh west of the city between King street and Orange street, not far from where the Y. M. C. A. building now stands. The filling-in of the marsh has probably locally extirpated this species. Another related species *Cerithium floridanum* Mörch (7), *C. atratum* of my list, was also restricted to a small area, an old oyster bed at the west end of Marsh island. This is now a sand bar and the species may now be entirely absent in the harbor. At the latter place I also found my only living example of *Murex fulvescens* Sowb. (*M. spinicostata* Val.).

At the mouth of Hospital creek was a large patch of the grass-like Gorgonia—*Leptogorgia virgulata*. On this lived the little *Simnia uniplicata* Sowb. 8 (*Ovula uniplicata*), as the Gorgonia varied in color so did the shells of the *Simnia*, agreeing in color with the bunch of Gorgonia on which they were found—either white, light-yellow, orange or pink. On one occasion while hunting for *Simnia* a conspicuous object attracted my attention, its flesh-colored mantle with irregular blackish markings was very striking, and as it contracted I found I had a *Cyphoma gibbosa* Linn. (*Ovula gibbosa*), common to the West Indies. For some time I wondered why the animal of this shell should be so very conspicuous; then the thought occurred to me that in more southern waters probably most of them live on the "sea-fans" (*Rhipidogorgia flabellum*) and with their



reticulated structure as a background the animals would be scarcely distinguishable, like the Sargassum fish (*Pterophryne histrio*) in the gulf-weed (Sargassum).

*Cyrena carolinensis* Bosc. (9). In making a bridge across a small branch of the St. Sebastian River I first discovered this species. It was a large and interesting variety in which the umbones were unusually high, many of the specimens closely resembling in size and form the figure of *C. olivacea* Carp. from Mexico, as given by Prime (Monograph American Corbiculidae, p. 17, fig. 12, 1865). Although the tide flowed freely up the little creek, there was at low tide a small stream of fresh water even at the driest time. At the junction of this little stream and the high ground there was a small colony of *Neritina lineolata* Lam. (*N. reclinata* Say). I looked in vain for this species during my recent visit, nor did I find *Cyrena* near the little bridge, but it may still exist in other parts of the stream which time did not permit me to examine thoroughly. At the mouth of Pellican creek near the Matanzas Inlet was a colony of *Neritina virginea* Linn. They were the olive-green or more brackish water type and probably represent the most northern limit of this species on the Atlantic coast. About seven miles south of Matanzas Inlet was a large cypress swamp in what was known as "Bike's Hammock," here was found *Ampullaria depressa* var. *hopetonensis* Lea, which seems quite distinct from those of the St. Johns River drainage. There were also fine specimens of *Ancylus peninsulae* Pils. & Johns.—erroneously referred to *A. filiosus* in my list. The east coast canal has drained much of this section now called Bikes Prairie on the coast survey chart. In many places I saw truck arms as I passed through the canal on my way north from Daytona.

These notes suffice to show some of the changes that can take place in a limited area in a comparatively short time, and the probable effect of such changes on certain species. It is not at all peculiar to St. Augustine, for similar changes are going on at many other places along the coast and in the vicinity of our cities. The importance of a careful study of a local fauna cannot be too strongly urged. The destruction of the forests, the

draining and filling of swamps and marshes, the construction of dams, etc., all tend toward lessening the fauna and flora of a given area.

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NEW LAND SHELLS FROM ALABAMA AND TENNESSEE.

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BY GEO. H. CLAPP.

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*POLITA CUMBERLANDIANA*, n. sp.

Shell widely umbilicated, flattened, very slightly convex above and below, glossy, thin and translucent, light horn color, regularly but lightly sculptured across the whorls by curved, closely set radiating impressed lines parallel with the lines of growth which are very faint; spire flattened; stature shallow; whorls about 4, rapidly increasing, the last decending at the aperture which is elongate-oval flattened above, lip very slightly reflected at the columellar insertion; umbilicus wide, displaying all the whorls and contained about 4 times in the diameter of the shell.

Greater diameter 3, lesser 2.5, altitude 1.25 mm.

Collected by Herbert H. Smith on the Cumberland Plateau near Stevenson, Jackson Co., Alabama, also near Anderson, and near Sherwood, Franklin Co., Tennessee.

Types No. 9157 of my collection. Paratypes in the collections of the Academy of Nat. Sci., Philadelphia and Bryant Walker, Detroit, Mich.

At first glance this species may be taken for immature *V. radiatula* as the general shape and the sculpture of impressed radiating lines are the same, but it is uniformly small with the same number of whorls, the sculpture is weaker and the shell more flattened. Under high magnification there is merely the faintest trace of impressed spiral sculpture. It is much smaller than *Polita rhoadsi*.